



*From “Wetland Program Development Grants (WPDGs) Case Studies”
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Missouri Department of Natural Resources (MDNR): *Assessing the impact of
urbanization on wetland acreage in Missouri*

Introduction

Missouri has lost over 87 % of its wetlands and the state is especially concerned with protecting the remaining 458,000 acres and restoring other priority areas. The Missouri Department of Natural Resources (MDNR) was designated by the Governor in 1990 to be the agency to coordinate wetland protection activities. The Water Resources Program and the Water Pollution Control Program, both within MDNR, coordinate the majority of wetland protection activities in the state.

Through support from an early WPDG, MDNR developed the framework for a wetland conservation plan. MDNR invited a wide range of stakeholders, including state legislators, to participate in a Wetlands Advisory Council (WAC). Through a consensus building process, WAC developed a statewide strategy for wetland protection and management. MDNR continued to build its state wetland program by using the strategy for guidance. With support from subsequent WPDGs, MDNR added outreach to the conservation plan; developed a video to educate the public about the importance of protecting Missouri wetlands; formed a technical advisory council; developed wetland water quality standards and mitigation banking procedures; produced a document highlighting landowner activities; and completed several technical projects that utilized remote sensing and monitoring to address wetland quality, quantity and change in several areas.

WPDG Activity

In 2000, MDNR focused on assessing the impact of urbanization on wetlands in the East Fork Little Blue River and Rock Creek watersheds. They were primarily interested in determining how wetland acreage had changed since the National Wetland Inventory (NWI) in 1984/85. The East Fork Little Blue River watershed is located in Jackson County, Missouri and has received significant commercial and residential growth over the past 20 years with the expansion of the Kansas City metropolitan areas. The Rock Creek watershed, also in eastern Missouri, has seen a 20% population growth over the past 15 years. These statistics made these watersheds ideal candidates to assess the impact of urbanization on wetlands. MDNR looked at impacts on water and soil quality, plant diversity and land use (via interpretation of aerial photography). Some of their results are highlighted below.

A comparison of 1981 NWI data from the East Fork Watershed to aerial photography taken in March 2002 revealed a 40% increase in urban area and 27% increase in wetland habitat (Rouse, 2004). Though initial analysis seemed to show a significant increase in wetland acreage within the East Fork Little Blue River watershed, a seemingly positive result, further investigation uncovered a potentially opposite impact. Knowledge of

activities in the watershed revealed that most of this increase was caused by the creation of Blue Springs Lake, which actually inundated several acres of palustrine, forested wetlands. Therefore, the function and value of that wetland area was significantly altered and could be considered deleterious to the overall watershed. This study demonstrated how aerial photography, while beneficial for locating wetlands in a watershed, could be misleading if it were used as a sole indicator of wetland losses and gains. Their results also highlight the importance of careful interpretation when documenting wetland losses and gains and will aid future wetland planning efforts.

Current and Future Work

MDNR is currently focused on improving wetland mitigation in the state. They are exploring methods for determining the economic value of wetlands within major watersheds in the state. This understanding will hopefully increase public support for wetlands protection. Natural resource agencies can use economic value as a measure for debiting and crediting wetland mitigation banks or for establishing a state wetland tax credit. MDNR is also working on a method for identifying potential headwater wetland mitigation sites within agricultural landscapes. These combined activities will allow MDNR to better condition 401 certifications.

Please visit the Missouri Department of Natural Resources (MDNR) wetlands webpage (<http://www.dnr.mo.gov/env/wrc/wetlands.htm>) for more information on how the State is working to protect and restore these valuable areas.

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